Problem of the Week #2
9/2/2019 to 9/15/2019

A mathematician has 10 pairs of blue dress socks, ranging in 10 distinct shades from dark navy blue down to light blue. This mathematician has noticed that aside from wearing two socks from the same pair, he can also wear any two socks from adjacent shades without anyone but him being able to tell the difference—being a mathematician, he defines any two socks that are from the same or adjacent shades as an acceptable pair. One laundry day he is deep in thought working out a math problem while putting away his socks, and he randomly pairs them all together. What is the probability that all 10 pairs in this random pairing are acceptable pairings?

Solutions to the last problem were submitted by Ziad Aramouni (Lebanon), Colin Bown (Austin, TX), Phil Boyd (Manchester, England), T.J. Gaffney (Las Vegas, NV), Ben Gustafson (TU), Rob Hill (Gambrills, Maryland), Kipp Johnson (Beaverton, OR), Jack Kennedy (San Antonio), Hari Kishan (India), Tengiz Kutchava (Georgia, the country), Yann Michel (Paris, France), Benjamin Phillabaum (Bothell, WA), Michael Tomaine (Bellevue, WA), F. Wallner (Germany), and Zurab Zakaradze (Georgia, the country).

Solutions for this problem can be submitted to Dr. Brian Miceli at bmiceli@trinity.edu, or you can drop them off at his office, MMH 115F. People who submit solutions will be acknowledged on the next problem. If you like these problems, you may be interested in the Putnam Exam, and more information on the Putnam Exam may be found HERE.